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Reviewer: Anne Corrigan

Timestamp: [year=2008; month=9; day=19; hr=13; min=26; sec=20; ms=601; ]

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Application No: 09892613 Version No: 5.0

**Input Set:****Output Set:**

**Started:** 2008-09-19 12:29:24.990  
**Finished:** 2008-09-19 12:29:29.744  
**Elapsed:** 0 hr(s) 0 min(s) 4 sec(s) 754 ms  
**Total Warnings:** 71  
**Total Errors:** 0  
**No. of SeqIDs Defined:** 71  
**Actual SeqID Count:** 71

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (1)
W 402	Undefined organism found in <213> in SEQ ID (2)
W 213	Artificial or Unknown found in <213> in SEQ ID (3)
W 213	Artificial or Unknown found in <213> in SEQ ID (4)
W 213	Artificial or Unknown found in <213> in SEQ ID (5)
W 213	Artificial or Unknown found in <213> in SEQ ID (6)
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W 213	Artificial or Unknown found in <213> in SEQ ID (8)
W 213	Artificial or Unknown found in <213> in SEQ ID (9)
W 402	Undefined organism found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
W 213	Artificial or Unknown found in <213> in SEQ ID (12)
W 213	Artificial or Unknown found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)
W 213	Artificial or Unknown found in <213> in SEQ ID (17)
W 402	Undefined organism found in <213> in SEQ ID (18)
W 213	Artificial or Unknown found in <213> in SEQ ID (19)
W 213	Artificial or Unknown found in <213> in SEQ ID (20)

**Input Set:**

**Output Set:**

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**Total Warnings:** 71  
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Error code	Error Description
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W 213	Artificial or Unknown found in <213> in SEQ ID (22)
W 213	Artificial or Unknown found in <213> in SEQ ID (23) This error has occurred more than 20 times, will not be displayed
W 402	Undefined organism found in <213> in SEQ ID (26)
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W 402	Undefined organism found in <213> in SEQ ID (35)
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W 402	Undefined organism found in <213> in SEQ ID (37)
W 402	Undefined organism found in <213> in SEQ ID (38)
W 402	Undefined organism found in <213> in SEQ ID (39)
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W 402	Undefined organism found in <213> in SEQ ID (46)
W 402	Undefined organism found in <213> in SEQ ID (47)
W 402	Undefined organism found in <213> in SEQ ID (48) This error has occurred more than 20 times, will not be displayed



# SEQUENCE LISTING

<110> Leung, Shawn Shui-on

<120> REDUCING IMMUNOGENICITIES OF IMMUNOGLOBULINS BY  
FRAMEWORK-PATCHING

<130> 655

<140> 09892613

<141> 2001-06-27

<160> 71

<170> PatentIn version 3.3

<210> 1

<211> 369

<212> DNA

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<220>

<223> FR-patched heavy chain variable region sequence (Full DNA  
Sequence) formed by joining the N- and C- terminal (SEQ 3 and 6)  
halves at the KpeI site.

<220>

<221> V\_region

<222> (1)..(369)

<400> 1

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gaagtgcagc tgctggagtc tgggggaggc ttagtgcagc ctggagggtc cctgaggctc      60
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ccgggaaagg ggctggagtg ggtcgcatat attagtagtg gtggtggtac cacctactat      180
ccagacactg tgaagggccg attcaccatc tccagagaca atgccaagaa ctccctgtac      240
ctgcaaataa acagtctgag ggtggaggac acagccttat attactgtgc aagacatagt      300
ggctacggta gtagctacgg ggttttgttt gcttactggg gccaaaggac tctggtcact      360
gtctcttca                                     369

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<210> 2

<211> 123

<212> PRT

<213> Chimaera sp.

<400> 2

Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly

1

5

10

15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Ile Tyr  
20 25 30

Asp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Tyr Ile Ser Ser Gly Gly Gly Thr Thr Tyr Tyr Pro Asp Thr Val  
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr  
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Val Glu Asp Thr Ala Leu Tyr Tyr Cys  
85 90 95

Ala Arg His Ser Gly Tyr Gly Ser Ser Tyr Gly Val Leu Phe Ala Tyr  
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120

<210> 3  
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<212> DNA  
<213> Artificial Sequence

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<223> N-template is a synthetic sense-strand oligonucleotide encoding  
amino acids 14-50 of the VH region (SEQ ID No. 2). The template  
is PCR-amplified by two primers (SEQ ID No. 4 and 5)

<220>  
<221> V\_region  
<222> (1)..(111)

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cctggagggt cctgaggct ctctgtgca gcctctggat tctccttcag tatctatgac 60  
  
atgtcttggg ttgccaggc accgggaaag gggtggagt gggtcgcata c 111

<210> 4  
<211> 57  
<212> DNA  
<213> Artificial Sequence

<220>

<223> 5' Primer is a synthetic sense-strand oligonucleotide encoding amino acid 1-19 of the VH region (SEQ ID No. 2). The 3' end of the primer overlaps with the 5'end of the template by 18 nucleotides.

<220>

<221> primer\_bind

<222> (1)..(57)

<400> 4

gaagtgcagc tgctggagtc tgggggaggc ttagtgcagc ctggagggtc cctgagg 57

<210> 5

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> 3' Primer is a synthetic anti-sense-strand oligonucleotide encoding amino acid 43-59 of the VH region(SEQ ID No. 2). The primer overlaps with the template by 21 nucleotides.

<220>

<221> primer\_bind

<222> (1)..(48)

<400> 5

gtaggtggta ccaccaccac tactaatgta tgcgaccac tccagccc 48

<210> 6

<211> 132

<212> DNA

<213> Artificial Sequence

<220>

<223> C-terminal is a synthetic sense-strand oligonucleotide encoding amino acid 68-111 of the VH region (SEQ ID No 2) The template is PCR-amplified by two primers (SEQ ID No 7 and 8)

<220>

<221> V\_region

<222> (1)..(132)

<400> 6

ttcaccatct ccagagacaa tgccaagaac tccctgtacc tgcaaatgaa cagtctgagg 60

gtggaggaca cagccttata ttactgtgca agacatagtg gctacggtag tagctacggg 120

gttttgtttg ct 132

<210> 7

<211> 60  
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 <220>  
 <223> 5' Primer is a synthetic sense-strand oligonucleotide encoding amino acid 55-74 of the VH region (SEQ ID No 2). The 3' end of the primer overlaps with the 5'end of the template by 21 nucleotides.  
  
 <220>  
 <221> primer\_bind  
 <222> (1)..(60)  
  
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 ggtggtacca cctactatcc agacactgtg aagggccgat tcaccatctc cagagacaat 60  
  
 <210> 8  
 <211> 57  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> 3' Primer is a synthetic anti-sense-strand oligonucleotide encoding amino acid 105-123 of the VH region (SEQ ID No 2). The primer and the template overlaps by 21 nucleotides.  
  
 <220>  
 <221> primer\_bind  
 <222> (1)..(57)  
  
 <400> 8  
 tgaagagaca gtgaccagag tcccttggcc ccagtaagca aacaaaaccc cgtagct 57  
  
 <210> 9  
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 <213> Artificial Sequence  
  
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 <223> FR-patched light chain variable region sequence formed by joining the N- and C- terminal (SEQ 11 and 14) halves at the KpeI site.  
  
 <220>  
 <221> V\_region  
 <222> (1)..(321)  
  
 <400> 9  
 gatatccaga tgaccacgtc tccatcctcc ctgtctgcct ctgtgggaga cagagtcacc 60  
  
 attagttgca gggcaagtca ggacattagc aattatttaa actggtatca gcagaaacca 120



ggtaaggtc cgaaactcct gatctactac actagtatat tacactcagg agtcccatca 180  
 aggttcagtg gcagtgggtc tggaacagaa ttactctca ccattagctc cctgcagcca 240  
 gaagattttg ccacttactt ttgccaacag ggtaatacgc ttccgtggac gttcgggtgga 300  
 ggcaccaagg tggaatcaa a 321

<210> 10  
 <211> 107  
 <212> PRT  
 <213> Chimaera sp.

<400> 10

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Ser Asn Tyr  
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
 35 40 45

Tyr Tyr Thr Ser Ile Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80

Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp  
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys  
 100 105

<210> 11  
 <211> 108  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> N-template is a synthetic sense-strand oligonucleotide encoding  
 amino acid 11-46 of the VL region (SEQ ID No. 10). The template  
 is PCR-amplified by two primers (SEQ ID No. 12 and 13)

<220>

<221> V\_region

<222> (1)..(108)

<400> 11

ctgtctgcct ctgtgggaga cagagtcacc attagttgca gggcaagtca ggacattagc 60

aattatttaa actggtatca gcagaaacca ggtaaggctc cgaaactc 108

<210> 12

<211> 51

<212> DNA

<213> Artificial Sequence

<220>

<223> 5' Primer is a synthetic sense-strand oligonucleotide encoding amino acid 1-17 of the VH region (SEQ ID No 10). The 3' end of the primer overlaps with the 5'end of the template by 21 nucleotides.

<220>

<221> primer\_bind

<222> (1)..(51)

<400> 12

gatatccaga tgacccagtc tccatcctcc ctgtctgcct ctgtgggaga c 51

<210> 13

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> 3' Primer is a synthetic anti-sense-strand oligonucleotide encoding amino acid 40-53. The primer and the template overlaps by 18 nucleotides.

<220>

<221> primer\_bind

<222> (1)..(40)

<400> 13

atatactagt gtagtagatc aggagtttcg gaggccttacc 40

<210> 14

<211> 120

<212> DNA

<213> Artificial Sequence

<220>

<223> C-terminal is a synthetic sense-strand oligonucleotide encoding amino acid 59-98 of the VH region (SEQ ID No 10) The template is PCR-amplified by tow primers (SEQ ID No 15 and 16)

<220>  
 <221> V\_region  
 <222> (1)..(120)  
  
 <400> 14  
 ccatcaaggt tcagtggcag tgggtctgga acagaattta ctctcaccat tagctccctg 60  
  
 cagccagaag attttgccac ttacttttgc caacagggta atacgcttcc gtggacgttc 120  
  
 <210> 15  
 <211> 49  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> 5' Primer is a synthetic sense-strand oligonucleotide encoding  
 amino acid 50-65 of the VH region (SEQ ID No. 10). The 3' end of  
 the primer overlaps with the 5'end of the template by 21  
 nucleotides  
  
 <220>  
 <221> primer\_bind  
 <222> (1)..(49)  
  
 <400> 15  
 ctacactagt atattacact caggagtccc atcaagggttc agtggcagt 49  
  
 <210> 16  
 <211> 48  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> 3' Primer is a synthetic anti-sense-strand oligonucleotide  
 encoding amino acid 92-107 of the VH region (SEQ ID No 10). The  
 primer and the template overlaps by 21 nucleotides.  
  
 <220>  
 <221> primer\_bind  
 <222> (1)..(48)  
  
 <400> 16  
 tttgatttcc accttggtgc ctccaccgaa cgtccacgga agcgtatt 48  
  
 <210> 17  
 <211> 371  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> FR-patched heavy chain variable region sequence (Full DNA

Sequence) formed by joining the N- and C- terminal (SEQ 19 and 22) halves at the KpeI site.

<220>

<221> V\_region

<222> (1)..(371)

<400> 17

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caggtgcaac tgggtggcttc cggggctgag gtaaataagc ctggggcctc agtgaaggtc      60
tcttgcgaagg cttctggcta cacatttacc agttacaata tgcactgggt acggcagcct    120
cctggaaggg gcttgggaatg gattggagct atttatccag gaaatgggtga tactagttac    180
aatcagaaat tcaagggcaa ggccacattg actgcagaca aatcctccag cacagcctac    240
atgcagctca gcagtctgac atctgaggac tctgcggtct attactgtgc aagatcgcac    300
tacggtagta actacgtaga ctactttgac tactggggcc aaggcaccac tgttacagtc    360
tctctgatc a                                                                371
```

<210> 18

<211> 123

<212> PRT

<213> Chimaera sp.

<400> 18

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Gln Val Gln Leu Val Ala Ser Gly Ala Glu Val Asn Lys Pro Gly Ala
1              5              10              15
```

```
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20              25              30
```

```
Asn Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu Glu Trp Ile
35              40              45
```

```
Gly Ala Ile Tyr Pro Gly Asn Gly Asp Thr Ser Tyr Asn Gln Lys Phe
50              55              60
```

```
Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65              70              75              80
```

```
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85              90              95
```

```
Ala Arg Ser His Tyr Gly Ser Asn Tyr Val Asp Tyr Phe Asp Tyr Trp
100             105             110
```

Gly Gln Gly Thr Thr Val Thr Val Ser Ser Asp  
115 120

<210> 19  
<211> 114  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> N-template is a synthetic sense-strand oligonucleotide encoding amino acid 12-49 of the VH region (SEQ ID No. 18). The template is PCR-amplified by two primers (SEQ ID No. 20 and 21)

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<221> V\_region  
<222> (1)..(114)

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aataagcctg gggcctcagt gaaggtctcc tgcaaggctt ctggctacac attaccagt 60  
  
tacaatatgc actgggtacg gcagcctcct ggaagggggcc tggaatggat tgga 114

<210> 20  
<211> 57  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> 5' Primer is a synthetic sense-strand oligonucleotide encoding amino acid 1-19 of the VH region (SEQ ID No 18). The 3' end of the primer overlaps with the 5'end of the template by 24 nucleotides.

<220>  
<221> primer\_bind  
<222> (1)..(57)

<400> 20  
caggtgcaac tgggtggcttc cggggctgag gtaaataagc ctggggcctc agtgaag 57

<210> 21  
<211> 55  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> 3' Primer is a synthetic anti-sense-strand oligonucleotide encoding amino acid 43-60 of the VH region (SEQ ID No 18). The primer and the template overlaps by 21 nucleotides.

<220>  
 <221> primer\_bind  
 <222> (1)..(55)  
 <400> 21  
 tgtaactagt atcaccattt cctggataaa tagctccaat ccattccagg ccct 55

<210> 22  
 <211> 126  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> C-terminal is a synthetic sense-strand oligonucleotide encoding amino acid 70-111 of the VH region (SEQ ID No 18) The template is PCR-amplified by tow primers (SEQ ID No 23 and 24)

<220>  
 <221> V\_region  
 <222> (1)..(126)  
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 ttgactgcag acaaatcctc cagcacagcc tacatgcagc tcagcagtct gacatctgag 60  
 gactctgcgg tctattactg tgcaagatcg cactacggta gtaactacgt agactacttt 120  
 gactac 126

<210> 23  
 <211> 61  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> 5' Primer is a synthetic sense-strand oligonucleotide encoding amino acid 57-76 of the VH region (SEQ ID No 18). The 3' end of the primer overlaps with the 5'end of the template by 21 nucleotides.

<220>  
 <221> primer\_bind  
 <222> (1)..(61)  
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 tgatactagt tacaatcaga aattcaaggg caaggccaca ttgactgcag acaaatcctc 60  
 c 61

<210> 24  
 <211> 59  
 <212> DNA

<213> Artificial Sequence

<220>

<223> 3' Primer is a synthetic anti-sense-strand oligonucleotide encoding amino acid 105-123 of the VH region (SEQ ID No 18). The primer and the template overlaps by 21 nucleotides.

<220>

<221> primer\_bind

<222> (1)..(59)

<400> 24

tgatcagagg agactgtaac agtgggtgcct tggccccagt agtcaaagta gtctacgta 59

<210> 25

<211> 321

<212> DNA

<213> Artificial Sequence

<220>

<223> FR-patched light chain variable region sequence (Full DNA Sequence) formed by joining the N- and C- terminal (SEQ 27 and 30) halves at the BspEI site.

<220>

<221> V\_region

<222> (1)..(321)

<400> 25

gatattcaac tcacacagtc tccatcaagt ctttctgcat ctgtggggga cagagtcaca 60

attacttgca gggccagctc aagtttaagt ttcatgcact ggtaccagca gaagccagga 120

tcctcccca aacctggat ttatgccaca tccaacctgg cttccggagt ccctagtcgc 180

ttcagtggca gtgggtctgg gaccgagttc actctcaca tcagcagttt gcagcctgaa 240

gatttcgcca cttatttctg ccatcagtgg agtagtaacc cgctcacgtt cgggtgctggg 300

accaagctga ccgttctacg g 321

<210> 26

<211> 107

<212> PRT

<213> Chimaera sp.

<400> 26

Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly

1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Ser Ser Leu Ser Phe Met

20

25

30

His Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Pro Trp Ile Tyr  
 35 40 45

Ala Thr Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser  
 50 55 60

Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu  
 65 70 75 80

Asp Phe Ala Thr Tyr Phe Cys His Gln Trp Ser Ser Asn Pro Leu Thr  
 85 90 95

Phe Gly Ala Gly Thr Lys Leu Thr Val Leu Arg  
 100 105

<210> 27  
 <211> 129  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> N-template is a synthetic sense-strand oligonucleotide encoding  
 amino acid 9-51 of the VL region (SEQ ID No. 26). The template  
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<220>  
 <221> V\_region  
 <222> (1)..(129)

<400> 27  
 tcaagtcttt ctgcatctgt gggggacaga gtcacaatta ctgacagggc cagctcaagt 60  
 ttaagtttca tgcaactggtta ccagcagaag ccaggatcct cccccaaacc ctggatttat 120  
 gccacatcc 129

<210> 28  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> 5' Primer is a synthetic sense-strand oligonucleotide encoding  
 amino acid 1-15 of the VH region (SEQ ID No 26). The 3' end of  
 the primer overlaps with the 5'end of the template by 21  
 nucleotides.



<220>

<221> primer\_bind

<222> (1)..(45)

<400> 28

gatattcaac tcacacagtc tccatcaagt ctttctgcat ctgtg

45

<210> 29

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> 3' Primer is a synthetic anti-sense-strand oligonucleotide encoding amino acid 45-57. The primer and the template overlaps by 21 nucleotides.

<220>

<221> primer\_bind

<222> (1)..(40)

<400> 29

ggactccgga agccagggtg gatgtggcat aaatccaggg

40

<210> 30

<211> 120

<212> DNA

<213> Artificial Sequence

<220>

<223> C-terminal is a synthetic sense-strand oligonucleotide encoding amino acid 61-100 of the VH region (SEQ ID No 26) The template is PCR-amplified by tow primers (SEQ ID No 31 and 32)

<220>

<221> V\_region

<222> (1)..(120)

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ttcagtggca gtgggt